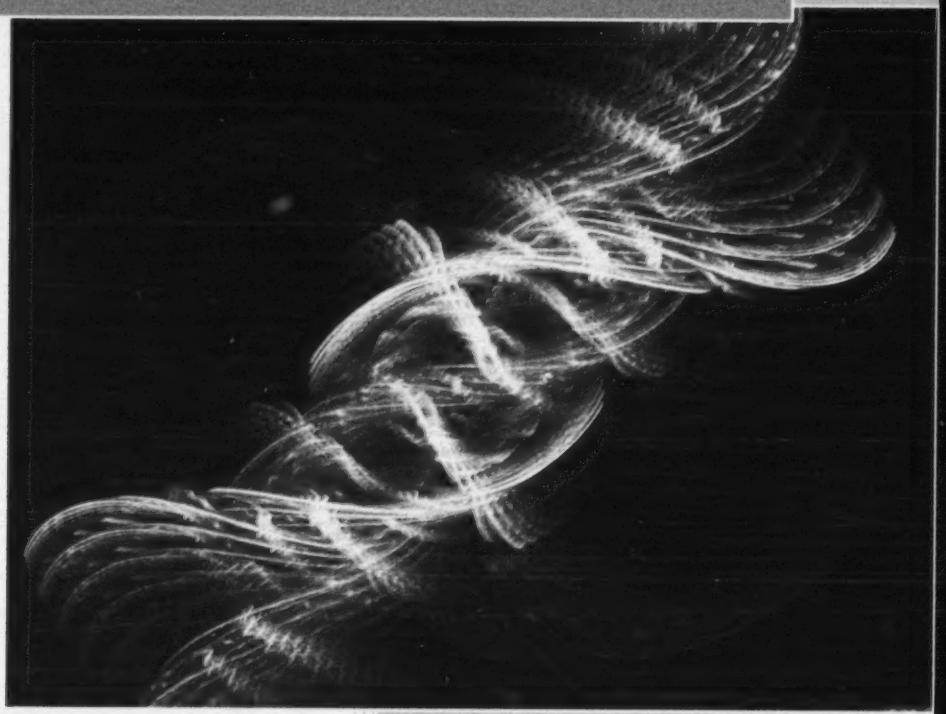
2009-2010

NATIONAL DNA DATA BANK ADVISORY COMMITTEE ANNUAL REPORT



NDDB AC

2009-2010

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Introduction

The National DNA Data Bank (NDDB) which commenced operations in July 2000 under authority of the *DNA Identification Act*, 1998, c.37, is structured under the Policing Support Services Branch of the RCMP and operates as a national service to all Canadian law enforcement agencies. The NDDB, with a staff complement of 23 specialists, operates on a budget of approximately $3.7M per year. When fully staffed, the NDDB operates with a staff of 31 members.

The National DNA Data Bank is responsible for two principal indices:

1. The **Convicted Offender Index (COI)** is the electronic index that has been developed from DNA profiles collected from offenders convicted of designated primary and secondary offences identified in section 487.04 of the Criminal Code; and,
2. The **Crime Scene Index (CSI)** is a separate electronic index composed of DNA profiles obtained from crime scene investigations of the same designated offences addressed in the Act.

The NDDB contributes to the administration of justice and the safety of Canadians by ensuring that those who commit serious crimes are identified quickly across all police jurisdictions in Canada while innocent people are eliminated from suspicion. It assists law enforcement agencies in solving crimes by:

- Linking crimes together where there are no suspects; (CSI to CSI match)
- Helping to identify suspects; (CSI to COI match)
- Eliminating suspects; (no match between the suspect's DNA profile and the CSI and COI profiles in the NDDB)
- Determining whether a serial offender is involved

National DNA Data Bank Advisory Committee

The National DNA Data Bank Advisory Committee was formalized under authority of the *DNA Data Bank Advisory Committee Regulations*; P.C. 2000-635 May 4, 2000. Committee members are as follows:

RICHARD A. BERGMAN (Chairperson) Deputy Commissioner (Rtd), Police Community Representative

THE HON. PETER CORY, C.C., C.D., Q.C. Representing the Law, retired Justice of the Supreme Court of Canada, Chancellor Emeritus of York University and Special Advisor to the Federal Dept. of Justice.

DR. RON FOURNEY, Director, National Services and Research, Forensic Science and Identification Services, RCMP, a founding member of the RCMP DNA program and instrumental in the development and implementation of forensic DNA typing in Canada.

DR. GEORGE R. CARMODY, (Vice Chairperson) Population Biology Specialist and Emeritus Adjunct Research Professor of Biology, Carleton University, Ottawa, Ontario, expert in population genetics and statistics as applied to forensic DNA applications

GISELE COTE-HARPER, O.C., Q.C., Legal expert on Human Rights issues, Barrister and Emeritus Professor, Faculty of Law , University of Laval , Sainte-Foy, Quebec

DR. WILLIAM S. DAVIDSON, Medical Genetics Specialist and Professor of Molecular Biology and Biochemistry, Simon Fraser University, Burnaby, B.C.

CHANTAL BERNIER, Assistant Commissioner, Office of the Privacy Commissioner of Canada, Ottawa, Ontario

DR. FREDERICK R. BIEBER, Canadian-born Associate Professor of Pathology, Faculty of Medicine, Harvard University, Boston, Massachusetts. Dr. Bieber is a medical geneticist and a specialist in bio-medical ethics.

Guest of the National DNA Data Bank Advisory Committee

April/May 2009

A/Commr. Peter Henschel	Director General FS&IS
Marc Taschereau	Public Safety Canada
Melad Botros	Public Safety Canada
Isabelle Trudel	National DNA Data Bank - On special assignment
David Bird	RCMP Legal Counsel
Greg Yost	Department of Justice (DOJ)
Jeff Modler	FS&IS Biology Services - Canadian SWGDAM
Kelly Morton-Bourgon	Department of Justice (DOJ)
Jennifer Seligy	Office of the Privacy Commissioner
Lisa Campbell	Office of the Privacy Commissioner
Michael Dale	RCMP Legal Services (Observer)

October 2009

Mr. Bob Greene, O.B.E.	Home Office, UK
Isabelle Trudel	National DNA Data Bank
Jeff Modler	FS&IS Biology Services - Canadian SWGDAM
David Bird	RCMP Legal Counsel
Greg Yost	Department of Justice
Julie Mugford	Public Safety Canada
Justin Ducette	Public Safety Canada
A/Commr. Peter Henschel	Director General FS&IS

April 2010

Justin Ducette	Public Safety Canada
Yvonne Walsh	Department of Justice Equality and Law reform, Ireland
Gareth Jones	Centre of Forensic Science
David Bird	RCMP Legal Counsel
Greg Yost	Department of Justice
Paula Clark	Department of Justice
Jeff Modler	FS&IS Biology Services – Canadian SWGDAM
Isabelle Trudel	National DNA Databank
Lynda Iwanoff	FS&IS Client Services, RCMP

This report covers the period from May 2009 to May 2010. During that period, the National DNA Data Bank Advisory Committee met twice in Ottawa during October 2009 and April 2010. The full committee also met with Department of Justice representatives in October 2009 to provide input and response to a DNA consultation document developed by the Department of Justice. Members of the Advisory Committee also attended a similar consultation meeting held in Ottawa in May 2010.

Data Bank Growth

As of April 12, 2010, the COI had received more than 204,000 biological samples over its almost 10 year history of which 189,500 were analyzed and their DNA profiles entered into the COI. Duplicates, no court order, non-designated offences, inappropriate kits, inadequate samples and authorized removals accounted for the difference between samples received and profiles entered into the COI of the NDDB. A rejection rate under 2% is quite low in comparison to many DNA Data Banks in other countries. During the same period, more than 55,000 DNA profiles were uploaded to the CSI from the three contributing forensic organizations; six RCMP Forensic Laboratories, the Centre of Forensic Science (Toronto) and the Laboratoire de sciences judiciaries et de medicine légale (Montreal). In total, the NDDB now contains approximately 245,000 DNA profiles. Searches of the CSI against the COI (crime scene profiles vs. convicted offender profiles) have now produced over 14,700 offender hits while searches of the CSI against itself (CSI to CSI) have produced some 2200 hits. Matches have assisted in the investigation of over 1000 homicides, 1933 sexual assaults, 366 attempted murders and over 1700 armed robberies. Over 7,700 break & enter with intent investigations were also assisted through NDDB searches. Perhaps more importantly, approximately 27% of those suspects whose DNA profiles are checked against the NDDB's CSI are exonerated immediately, thus focusing an investigation on other suspects. While forensic DNA analysis has gained widespread acceptance and public attention in view of its high profile involvement in many criminal investigations and prosecutions, its ability to exonerate suspects during an investigation or even after some citizens have served long prison terms is a major benefit associated with the technology. The power of this technology to exonerate is clearly equal to its influence upon conviction.

Convicted Offender Index and Endorsements

As reported previously, when the NDDB was planned and implemented in 2000, the anticipated capacity was based on projections provided by Government Consulting Services. Based on an expected 18,700 submissions per year following convictions for Primary Designated Offences (100% of 18,700) and 9,500 submissions following convictions for Secondary Offences (10% of 95,000), the capacity was estimated to be at least 28,000 samples per year. For several years, there was concern expressed in relation to the lower than expected submission rate of COI samples following convictions for Primary Designated Offences, e.g., approximately 9000 to 10,000 samples per year for the 5 years up to FY 2007/08. This level represented only 50% of the originally anticipated intake rate. As reported last

year, statistics now indicate that there has been a significant increase in the submission rate for Primary Designated Offences over the past 2 years, e.g., 17,500 during FY 2008/09, and approximately 19,000 during FY 2009/10. Secondary submissions to the COI have also increased significantly. For the 5 years previous to FY 2007/08, secondary submissions ranged from 8,000 to 9,000 samples per year, only slightly lower than the originally anticipated submission rate. However, during FY 2008/09, over 16,000 secondary samples were received by the NDDB, an increase in excess of 80% over the previous year. Secondary submissions dropped slightly in FY 2009/10 to just over 14,000 following the promotion of several secondary offences to primary offences in January 2008.

The endorsement process as defined by Section 487.071 of the *Criminal Code* involves the submission of fingerprints and an unexecuted DNA order following conviction for a further offence when an offender's DNA profile is already contained within the COI. The purpose of the endorsement process is to ensure that an offender's DNA profile remains in the NDDB should the original offence for which the DNA sample was ordered be overturned on appeal.

Total submissions to the COI from both designated categories and endorsements for the last three fiscal years are noted below:

Convicted Offenders Submissions and Endorsements

Type	F/Y 2007/08	F/Y 2008/09	F/Y 2009/10
Samples received	19,302	34,017	32,516
Endorsements	520*	6,756	10,363
TOTAL	19,822	40,773	42,879
Percentage - Endorsements	2.6	16.6	24.2

*Endorsements and amendments to the *DNA Identification Act* came into force Jan 1, 2008

While COI sample submissions dropped by slightly over 4% in F/Y 2009/10, endorsements increased by over 50%, for an overall increase of just over 5% in COI submissions. The major impact upon the growth rate of COI submissions clearly occurred during F/Y 2008/09 following amendments to the

legislative scheme made by *An Act to amend the Criminal Code, the DNA Identification Act and the National Defense Act,* S.C. 2005 c.25 (former Bill C-13) and by *An Act to amend the Criminal Code, the DNA Identification Act and the National Defense Act.* S.C. 2007 c.22 (former Bill C-18) which came into full force on January 1, 2008. These amendments upgraded a number of Secondary designated offences to Primary designated offences, added 176 new offences to the designated categories and eliminated judicial discretion for 16 serious offences involving grave violence. The increase in endorsements received is expected to continue as the impact of recidivism by those already in the COI begins to take effect.

At the NDDB level, advances in technology would indicate that the data bank will be able to process up to 60,000 COI samples per year with only moderate resource increases. However, should the COI input increase more dramatically, the NDDB will be faced with a significant resource challenge. In a June 2009 report from the House of Commons Standing Committee on Public Safety and National Security, (House Standing Committee) Recommendation 3 suggests that the *DNA Identification Act* and related laws be amended to systematically require the taking of a DNA samples upon conviction for all designated offences. In a similar vein, Recommendation 1 in a June 2010 report from the Senate Standing Committee on Legal and Constitutional Affairs (Senate Standing Committee) recommended that the *Criminal Code* be amended to allow for the immediate and automatic collection of a DNA sample from any adult who has been convicted in Canada of a designated offence. According to Department of Justice preliminary forecasts, this would increase the COI sample input to the NDDB to a range of 170,000 to 220,000 samples per year an increase ranging from 400 to 500% over the FY 2009/10 level. This would clearly require a significant human and technical resource increase to the NDDB, as noted in Recommendation 16 of the report from the Senate Standing Committee on Legal and Constitutional Affairs. Funding increases to the NDDB are clearly in arrears and should be increased by direct A Budget financing directed exclusively to the NDDB.

Crime Scene Index – Sample Volume

During the 5 fiscal years prior to FY's 2008/09, the CSI profiles uploaded to the NDDB from contributing forensic laboratories ranged from 6400 to 7800, the average being about 7000 per year. The growth

rate in this index has not been consistent, sample submissions having declined during one of the five years. During FY 2008/09, CSI profile submissions rose to 7351, a level higher than the 5 year average. During F/Y 2009/10 submissions again decreased to approximately 6,800. Compared to the considerable growth in the COI following the passage of Bills C-13 and C-18, it is clear that the total uploads of crime scene profiles to the CSI from the three contributing laboratory organizations is not growing rapidly.

Profile submissions to the CSI since July, 2000 total just over 55,000. The COI is now approximately four times larger than the CSI. As reported in a 2007 study by Government Consulting Services (GCS), a significant enhancement of the match rate is not only dependent upon an increase in the number of COI profiles in the NDDB, but also a parallel increase in profile submissions to the CSI, i.e., uploading of unsolved crime scene profiles from the contributing forensic laboratories, all of which are encountering service demands well above their throughput capacity. This issue has been the subject of comments by the Auditor General of Canada in her May 2007 audit report of the RCMP Forensic Laboratories, by the Auditor General of Ontario in the December 2007 report on the Centre of Forensic Sciences (Toronto), by the 2009 Report of the House of Commons Standing Committee on Public Safety and National Security following their Statutory Review of the *DNA Identification Act* and by the Senate Standing Committee on Legal and Constitutional Affairs in its 2010 report. With existing resources, it is not apparent that the contributing forensic laboratories have the capacity to significantly increase their DNA processing throughput and subsequently upload the additional crime scene profiles to the NDDB.

While the growth in the CSI in recent years has been relatively modest and would be expected to grow if resources to the contributing laboratories are increased, the input volume to the CSI will always be significantly lower than the COI volume since a great many samples to the COI follow convictions for crimes which do not involve the use of DNA in police investigations. At the same time, the Advisory Committee continues to believe that the COI growth rate will eventually begin to moderate or decline as Endorsement submission following recidivism increase and the COI becomes more reflective of the active criminal population in Canada.

Contributing Provinces and Laboratories

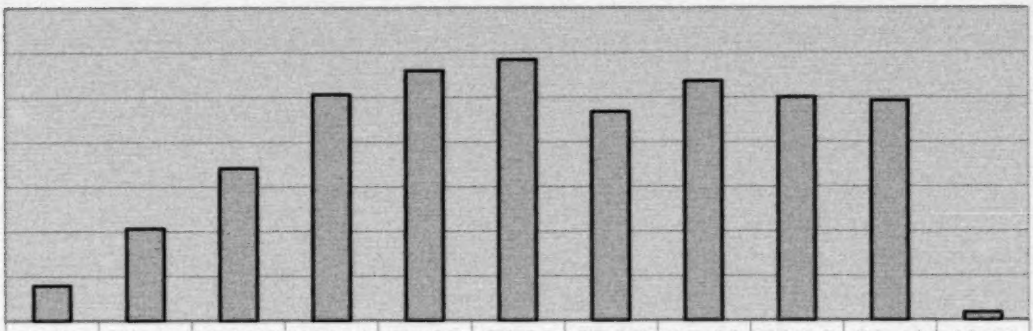
Although empirical and not corrected for provincial/regional crime and conviction rates, the following tables illustrates the COI and CSI contribution comparisons by percentage from the three contributing forensic organizations and regions over the past several years:

Regions	% of Canadian Population (%)	COI Samples from Provinces/Regions 2000-2008/09 (%)	CSI Profile uploads from Laboratories 2000-2008/09 (%)	CSI Profile uploads 2009/10 (%)
Ontario	39	44	39	36
Quebec	23	17	31	21
RCMP Jurisdictions	38	39	30	42

Ontario's contribution to the COI has been moderately higher than its population percentage for several years and Quebec's input slightly lower while the RCMP jurisdictions are population consistent. CSI uploads have changed significantly in recent years, both Ontario's and Quebec's contributions having decreased while those from the RCMP jurisdictions have increased in relation to population.

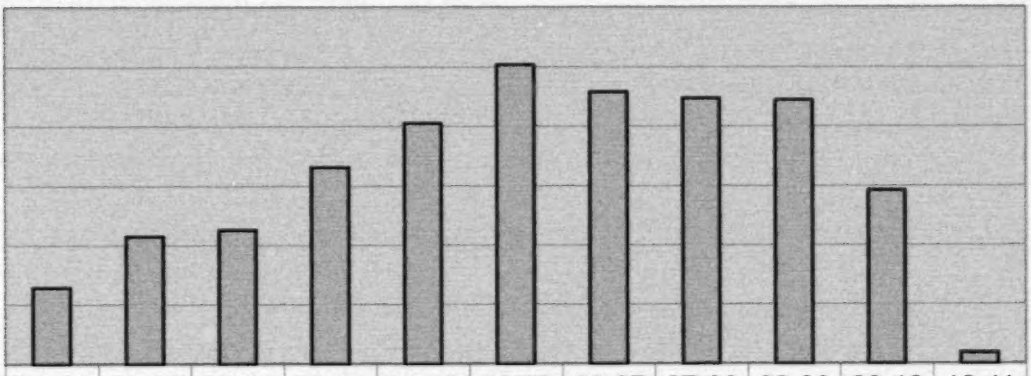
The following charts illustrate the number of DNA profile submissions to the CSI from the three contributing organizations over a 10 year period. Submissions from all three contributors grew significantly over the first 5 years, peaked in 2005/06 and began to decline thereafter. By 2009/10, Toronto submissions had dropped by about 500 per year, Montreal by over 1000 per year, while the RCMP returned to positive growth during 2007/0-8 and has grown by almost 1000 submissions per year since 2005/06.

Summary of Crime Scene Profiles Received - CFS, Toronto



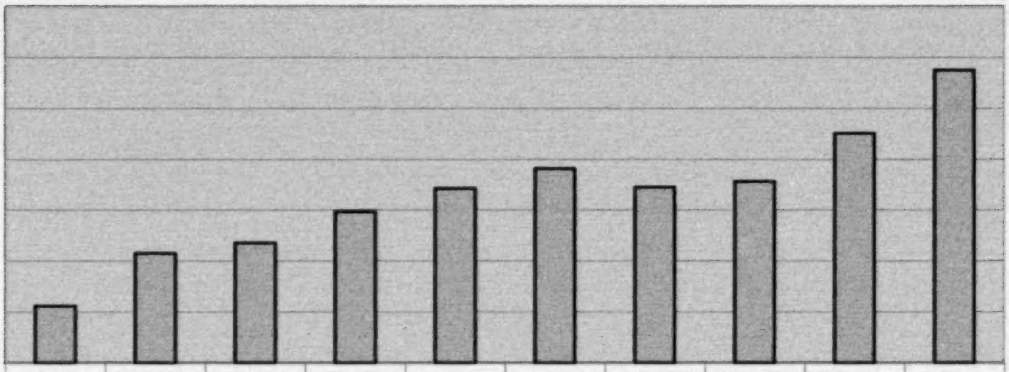
	00-01	01-02	02-03	03-04	04-05	05-06	06-07	07-08	08-09	09-10	10-11
Series1	392	1,033	1,705	2,529	2,799	2,923	2,334	2,679	2,501	2,462	81

Summary of Crime Scene Profiles Received - LSJML, Montreal



	00-01	01-02	02-03	03-04	04-05	05-06	06-07	07-08	08-09	09-10	10-11
Series1	646	1,072	1,126	1,655	2,023	2,516	2,286	2,236	2,218	1,457	93

Summary of Crime Scene Profiles Received - RCMP Regional Labs

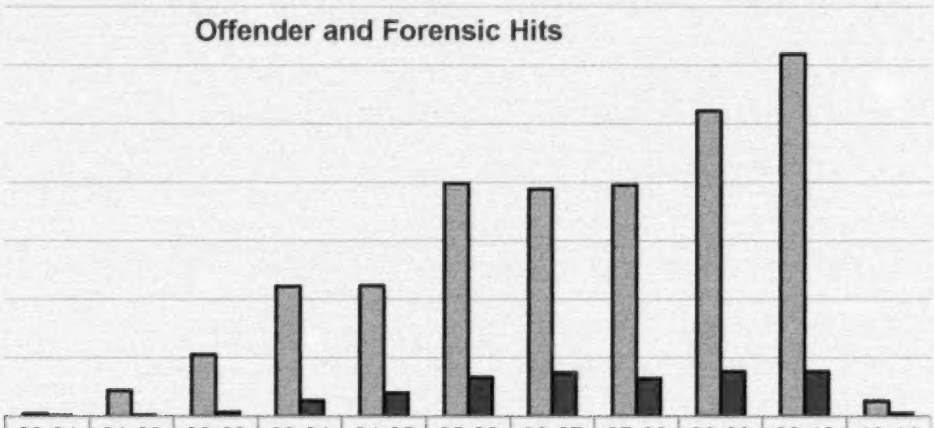


	00-01	01-02	02-03	03-04	04-05	05-06	06-07	07-08	08-09	09-10
Series1	559	1,074	1,180	1,486	1,714	1,905	1,722	1,779	2,253	2,873

While the specific circumstances which have led to the decreasing number of CSI submissions from the Ontario and Quebec laboratories during the past 5 years are not known in detail, there have been some ongoing changes in automation preparation, technology evaluation and validation studies in both laboratories in recent years. It is however, the view of the Advisory Committee that resourcing challenges are probably the major contributing factor behind these trends. Funding contributions to both Ontario and Quebec through the Biology Casework Analysis Agreement process have not been resolved and stabilized, these funding arrangement having been originally designed to offset the provincial costs for their DNA profile contributions to the CSI in the NDDB. Had submissions from Toronto and Montreal remained at least constant since 2005/06, the CSI would have grown by at least 22% during that period and potential links to many more crimes could have been generated through matches to the COI. The Advisory Committee was encouraged by the conclusions in the recent House and Senate Committee Reports, both of which recommended that that Federal and Provincial governments ensure that adequate and sustained funding be made available to the Quebec, Ontario and RCMP forensic laboratories.

NDDB Effectiveness

Although there are many approaches and methods to measure the effectiveness of forensic DNA's contribution to the Canadian Justice System, accurate statistics which follow an exhibit trail from the crime scene through the police investigation to the forensic laboratory analysis to the National DNA Data Bank through the Canadian Police Services Information Centre (CPSIC) and then back to police, crown attorneys and courts are difficult to obtain. One measure is to observe the growth in match rates between the CSI and the COI of the NDDB on a year to year basis. The following chart illustrates the number of matches over a period of 10 years.



	00-01	01-02	02-03	03-04	04-05	05-06	06-07	07-08	08-09	09-10	10-11
Offender Hits	18	218	526	1,110	1,114	1,992	1,941	1,976	2,608	3,095	129
Forensic Hits	7	9	34	132	198	331	372	324	381	381	27

Offender hits identify matches between the CSI and the COI. **Forensic hits** identify matches between profiles within the CSI itself, i.e., unsolved serial offences. Clearly, the number of matches to the COI has continued to grow in a steady and generally linear manner. The number of days to reach each 1000 hits has dropped from 168 days in 2007 to 120 days in early 2010. The forensic hit rate has leveled off during the past 5 years, consistent with the observations discussed in the previous section dealing with CSI submission rates. In 2006, at the request of the Advisory Committee, *A National DNA Utilization Study* was funded and conducted by the Department of Justice and included both Public

Safety Canada (PSC) and the RCMP. The study's conclusions were published in the 2008/09 Annual Report and provided a first time baseline analysis of DNA utilization rates in Canada. Since the publication of this study, Bills C-13 and C-18 came into effect in early 2008. The addition of many more designated offences in the law has resulted in an almost 80% increase in COI sample submissions to the NDDB per year. It is the Committee's intention to request a similar utilization study in the future; however, it may be prudent to delay such a proposal until Parliament has dealt with the recommendations from the House and Senate Committees following their Statutory Review of the *DNA Identification Act*.

Retroactive Sample Collection Project.

The retroactive sample collection project, which began in 2000, was reconstituted in the spring of 2008, shortly after the passage and Royal Assent of the expanded retroactive provisions contained in Bill C-13. The number of offenders qualified for collection since 2000 grew to 6116. By March 2010, 5,356 files were concluded with 810 open files awaiting biological samples. The retroactive project should be complete by late 2010 or early 2011.

Training Program

The Training Unit of the NDDB continues to provide training to police officers and other justice personnel on DNA Legislation and procedures for the proper use of DNA kits for the collection of DNA samples. During F/Y 2009/10, training sessions were provided in British Columbia, Manitoba, Nunavut, Ontario, Quebec and Saskatchewan. The following table illustrates the 2009/10 training schedule.

2009/10 Training

Province	Correctional	Judicial	RCMP	Police	Other	Total
B.C.	0	3	78	8	1	90
Manitoba	6	0	19	53	0	78
Nunavut	0	0	1	0	0	1
Ontario	0	0	10	74	3	87
Quebec	0	0	32	0	0	32
Saskatchewan	0	17	99	18	0	134
TOTAL	**6**	**20**	**239**	**153**	**4**	**422**

Continued training in the evidence gathering and handling processes is extremely important in view of the number of transfers and promotions which occur routinely in police agencies across Canada. As well, the quality of the collection process is becoming more important as DNA analytical procedures become increasingly more sensitive to minute traces of DNA contained in exhibits collected at scenes of crime. In addition, the NDDB continues to provide a cadre of downloadable training packages covering all aspects of DNA collection on its website at http://www.nddb-bndg.org/train_e.htm. Training sessions for 2010/11 are scheduled for Alberta, British Columbia, Nova Scotia, New Brunswick and Ontario.

Missing Persons Index

The Advisory Committee continues to follow the progress of discussions between PSC and the Federal, Provincial, Territorial (FPT) Working Group in relation to the establishment of a National Missing Persons Index (MPI) in Canada. This group was created in 2003. In 2005, public consultations took place and three sub-groups were created to study definitions of missing persons, costing issues and a funding formula. In 2006, the Federal Government indicated that it did not support a model whereby the federal government would pay for all MPI related costs. In 2007, representatives from a number of

Federal and Provincial agencies met in Ottawa and participated in a process mapping exercise which produced possible model options. There has been very little further progress on the further development of an MPI reported to the Advisory Committee since that time. It is the Advisory Committee's understanding that both limited regional forensic laboratory capacity and funding issues are major challenges to the achievement of an agreement among the various jurisdictions involved. It is expected that FPT discussions on this issue will resume in the near future since both the House of Commons and Senate committees made recommendations concerning this issue in their reports. The House committee recommended the creation of a Missing Persons Index and a Victims Index while the Senate committee recommended the creation of a Missing Persons index and an Unidentified Human remains Index, to be followed immediately by the creation of a Victims Index. Both committees recommended that the Indices should be maintained within the NDDB. While the Advisory Committee continues to support the creation of such indices, that support is clearly contingent upon federal and provincial governments' ability to provide adequate and stabilized funding to the existing forensic laboratories in Ontario, Quebec, the RCMP and the NDDB. The possibility of contracting out the analysis of missing persons sample for DNA analysis should also be investigated.

Biology Casework Analysis Agreements

The Biology Casework Analysis Agreements were originally set up as a funding mechanism for the NDDB when it was established in 2000. They were conceived as a measure to assist the funding of the NDDB at a time when federal funding was difficult to obtain as well as an initiative to encourage the submission of crime scene profiles to the CSI in the NDDB from the Ontario and Quebec Forensic Laboratories. Under the BCAA's, the RCMP Contract Provinces agreed to share, with the Federal Government, the cost of biology casework analysis arising from criminal investigations of designated offences. The federal government agreed to pay a share of the cost for biology casework analysis to Ontario and Quebec, since the laboratories in those provinces are provincially funded and the uploading of their crime scene profiles was considered to be a critical contribution to the national NDDB program. In 2003, linkage of this agreement to the NDDB was discontinued and the RCMP received separate funding in the amount of approx. $900K to offset the cost of increased workload. The funding formula, paid from the RCMP budget, continued to provide Quebec and Ontario with increased resources (i.e., $2.3M to each Laboratory 2006/07). The RCMP has not yet received

permanent funding for the operation of the NDDB, approximately $3.7M in FY 2009/10. Present funding is being provided on an interim basis, year to year, from within the overall RCMP budget. The Advisory Committee has followed this issue for a number of years and has reviewed both the First and Second Evaluations of the BCA Agreements conducted in 2002 and 2006 by Consulting and Audit Canada and Government Consulting Services respectively. The latter report identified a number of problems associated with the BCAA's and ultimately recommended that based on the obvious relevance and continuing success of the NDDB, the NDDB should receive permanent allocated funding. Upon expiry on March 31, 2007, the BCAA's were extended on an interim basis while the Ministry (PSC) and Provincial/Territorial officials engaged in ongoing discussions of the BCAA's. The Agreements were again extended from year to year in March 2008, 2009 and 2010. As a result of the passage of Bills C-13 and C-18 in 2008, the Quebec, Ontario and RCMP forensic laboratories are experiencing a considerable increase in casework demand because of the inclusion of many more offences in the designated categories. This trend was confirmed in a 2009 report from General Consulting Services, Public Works and Government Services Canada. Ontario and Quebec have forecast a need for $11 and $13 million respectively over the next three years in order to increase human and technical resources to respond to their increased caseloads. The RCMP forensic laboratories are also facing fiscal challenges. The House Standing Committee, in recommendation 2 and the Senate Standing Committee, in recommendation 17 both recommended that the Government of Canada and the governments of Ontario and Quebec ensure that adequate and sustained funding be made available to the Ontario, Quebec and RCMP forensic laboratories. The Senate Standing Committee in recommendation 18 also recommended that the Government of Canada consider negotiating multi-year Biology Casework Analysis Agreements with Ontario and Quebec. The Advisory Committee fully supports these recommendations along with the Senate Standing Committee recommendation 16 which recommends sufficient resourcing be established for the NDDB as well. Clearly, the NDDB must be able to look forward and prepare to research, evaluate and validate new technologies and methodologies which contributing laboratories are now examining with the expectation that the data generated will be compatible with systems used by the NDDB.

Scientific Working Group on DNA Methodology (Canadian SWGDAM)

Canadian SWGDAM is presently an informal technical DNA committee with representatives from the three Canadian forensic laboratory organizations and the NDDB. The Canadian group mirrors a U.S. Department of Justice FBI sponsored American SWGDAM group. Forensic scientists from the NDDB have been members on the U.S. SWGDAM Committee since 1989 and forensic scientists from both the Quebec and Ontario provincial forensic laboratories have also attended the U.S. SWGDAM meetings for the last several years.

The US SWGDAM group reviews new DNA technologies, new analytical procedures and sets standards across a large number of laboratories in the U.S.A. so as to ensure that DNA data produced by forensic laboratories is accurate, quality assured and consistent with the standards which allow for its upload into the FBI developed Combined DNA Index System (CODIS). CODIS is a computer based data system that is used to store and compare DNA profiles in the NDDB and is used in 178 labs in 50 states in the USA and 41 labs in 33 other countries around the world. At present, Canadian SWGDAM is an *ad hoc* group which meets twice per year in conjunction with other scientific meetings such as the Canadian Society of Forensic Science. Participation is dependent upon budgets for attendance from the various laboratory organizations. It is the Advisory Committee's view that routine technical meetings between the three Canadian forensic organizations and the NDDB are extremely important in view of the rapidly changing technology which these organizations must study, evaluate, validate and develop interpretation guidelines and data sharing protocols. It is particularly vital that the three Canadian organizations share information on procedures and new developments in order to ensure that the final product, the DNA profile, is consistent with CODIS standards which allow for the uploading of CSI profiles to the NDDB and the subsequent searching of those profiles against the COI of the NDDB.

Canadian SWGDAM representatives have met with the Advisory Committee on several occasions in relation to their interest in moving forward to formalize the Canadian SWGDAM as an inter-organizational technical committee. The Advisory Committee is of the view that formalization of such a committee would be a constructive and important initiative to promote technical consensus between the Federal and Provincial government forensic laboratory partners. This should occur through an

agreement between the senior executive levels of the RCMP, Ottawa, the Centre of Forensic Science, Toronto and the Laboratoire de sciences judiciaries et de médecine légale (LSJML) in Montreal. A draft Memorandum of Understanding is in progress and four technical subgroups have been identified to study specific DNA technical issues, i.e., CODIS, New Technology, DNA Interpretation and Communications. In a recent update to the Advisory Committee, Canadian SWGDAM reviewed their progress on issues such as mixture guidelines and interpretation, Y-Chromosome profiling, DNA template threshold (Low Copy Number) analysis and international searching and moderate match policies. The Advisory Committee intends to schedule at least one update per year from the Canadian SWGDAM committee.

DNA Analytical Technology

Technology enhancements continue to be evaluated by the NDDB as well as biology operational forensic laboratories in the regions. Of particular interest will be the introduction of larger multiplex STR systems (15 STRs and amelogenin) as well as enhanced procedures to gain a higher success rate for limited biological sample with a faster turnaround processing time. Also the ability to derive polymorphic discrimination exclusively from male DNA (Y-STRS) is currently under limited use in Canada for forensic casework and will be reviewed for potential data entry into the NDDB. Validation of a new 3730 XL DNA sequencer is ongoing as well as the replacement of the sample puncher and robotic workstations. The NDDB is also validating the Identifier Direct and the Powerplex 16HS multiplex systems. A project to centralize the CODIS system is also in process.

Kinship Analysis (Familial Searching)

As indicated in past reports, it has been shown that novel searching methods could allow for the expanded use of the NDDB to aid in the identification of possible criminal suspects who may be closely related to known offenders in the COI. This type of analysis has been offered by the Forensic Science Service in the United Kingdom for several years and has led to the successful identification and conviction of offenders who would have otherwise remained unknown had familial searching not been pursued. This technique has also been used by some States in the USA, e.g., California and Colorado, and has resulted in the highly publicized exoneration of an innocent man who was convicted,

sentenced and served 19 years in prison prior to his brother being identified as the guilty party after a kinship analysis was completed. However, it should be noted that the use of familial searching or kinship analysis for the deliberate identification of close biological relatives through DNA similarities is not presently being used by the FBI forensic laboratory in the U.S. This subject has been addressed by the the Advisory Committee in several annual reports as well as by the Advisory Committee representatives who appeared before the Senate Standing Committee in 2009.

The Advisory Committee is fully aware of advantages, disadvantages and privacy implications of this technology and the associated concerns which have been expressed by various interested groups in Canada including the Office of the Privacy Commissioner. The Advisory Committee representatives to the House and Senate Standing Committees therefore suggested that should Parliament ultimately decide to authorize familial searching in Canada, it should be restricted to only those most serious, extended unsolved crimes for which issuance of a DNA order upon conviction is mandatory , that the authorizing authority should be at the level of the provincial Attorney General or the Judicial level through a warrant and this should only occur if the authorizing authority is satisfied that no other evidentiary or investigative leads are available. After a full consideration of the issue, the Senate Standing Committee recommended that *"before kinship analysis or familial searching be permitted, the Department of Justice further study the matter to determine how to appropriately craft a provision that would balance the need to protect society, the need to protect privacy rights, and the need to preserve the presumption of innocence. We are certainly of the view that such searching should not be allowed unless a series of restrictions on the ability to conduct such a search are put into place. We invite the Department of Justice to further analyze the impact that allowing kinship analysis or familial searching might have on the protection of society, the administration of justice, the privacy of individuals and the presumption of innocence."* The Advisory Committee is pleased that the Senate Standing Committee considered and commented upon this rather controversial issue in some depth and will continue to follow the progress of this technology and report on its results in other jurisdictions where its use is authorized.

INTERNATIONAL AGREEMENTS, G-8 SEARCH REQUEST NETWORK (SRN) PROJECT

As was reported previously, the G-8 International DNA Sharing Project was initiated by the G-8 countries to identify the technical and legal barriers that exist with the international exchange of DNA data. The G-8 Technical Working Group was assigned the task of developing recommendations to make the sharing of DNA information more effective. Two international groups (Prum Treaty Working Party 1, and Interpol,) have all identified requirements for an international exchange system but are based on different sharing concepts. At present there are limited common elements between the various DNA technologies employed to create the relevant data associated to a DNA profile to make for effective comparisons. It is also problematic for many countries to export their domestic reference DNA profiles for comparison but many countries are able to export their unsolved crime scene profiles for comparison with the profiles in another countries DNA data base. However to effectively do this, the exchanges should be in an electronic format. An agreed upon electronic format standardization would lead to a greater use of international exchanges to determine if there were DNA profile matches that could assist in investigations. Existing information exchange systems could then be used to share non-DNA relevant information such as crime scene information, missing person's profiles and unknown deceased information if such exchange purposes are permitted according to the domestic laws of each country who may be exchanging profiles for comparison. At present, The UK and the USA have signed a common agreement between them and are the first two G-8 countries to do so. Canada is in the process of seeking the necessary domestic approval to also sign the agreement. The agreement standardizes the electronic transmission and imposes restrictions on the use and retention of DNA profiles that are transmitted. Should the G-8 Search Request Network (SRN) Project prove beneficial, then consideration should be given to expanding the SRN to be administered by a third party such as Interpol so all countries could benefit from this approach. The development and acceptance of an agreement is slow and challenging due to the need to obtain domestic approval by each country to sign onto the SRN MOU. DNA data exchanges will continue with other countries by way of the existing Bilateral Agreements that are already in place and are based on a paper or fax transmission.

Statutory Review of the *DNA Identification Act*.

During the period February and April 2009, four members of the Advisory Committee appeared as witnesses before the House of Commons Standing Committee on Public Safety and National Security and the Senate Standing Committee on Legal and Constitutional Affairs in relation to a statutory review of the DNA Identification Act. Committee members appearing were Mr. R. Bergman, Mr. P. Cory, Dr. R. Fourney and Ms C. Bernier. Reports from the House of Commons and Senate committees were issued in June 2009 and June 2010. Both are available on the internet at:

http://www2.parl.gc.ca/HousePublications/Publication.aspx?DocId=3994957

http://www.parl.gc.ca/40/3/parlbus/commbus/senate/com-e/lega-e/rep-e/rep09jun10-e.pdf

The House committee made 7 recommendations which the Government has accepted in principle and indicated it will consult with the provinces, law enforcement and other stakeholders on a priority basis with a view to developing a consensus on how best to proceed. The Advisory Committee has participated in two consultative meetings in this regard sponsored by Department of Justice Officials. The Senate committee made 22 recommendations which are now being studied by the Government. A response is expected in the fall 2010. The Advisory Committee has not yet met to consider the recommendations made by the Senate committee nor is it practical to respond to all the recommendations in this year's annual report. However, comments on a few select issues may be appropriate in this report.

The Committee has previously discussed in some depth the issues involving the taking of DNA upon arrest and the making of DNA orders automatic for all adults following a conviction for a designated offence. The advisory committee is unanimous in its opinion that DNA should not be taken automatically upon arrest or charge. It is the committee's view that Canadian citizens continue to generally regard the taking of a biological sample for forensic DNA analysis as a more intrusive police procedure than the taking of fingerprints and that if reasonable and probable grounds exist for arrest and charge for a designated offence and biological evidence is recovered from the crime scene, police should seek a DNA warrant through the existing Criminal Code procedures. The DNA profile generated from the resulting warrant sample is then searchable against the crime scene DNA profile. Delays in the processing of crime scene exhibits in regional forensic laboratories can obviously complicate this process. However, the Committee is not convinced that the investigational and prosecutorial benefits

anticipated from taking DNA automatically upon arrest and or charge for all designated offences would outweigh the intrusion into the personal privacy of Canadian citizens.

In relation to the proposal by both the House and Senate Standing Committees to amend the law to allow for the automatic collection of DNA from any adult who has been convicted in Canada of a designated offence as defined by section 487.04 of the *Criminal Code,* it is the majority view of the Advisory Committee that once a person is convicted of an offence, that person's expectations of privacy are reduced to the point where the process for taking a DNA sample should be essentially an automatic administrative matter to be acted upon by the courts, the police or the appropriate staff of a correctional facility. The Committee is of the view that judicial discretion should continue in the case of young offenders.

The issue concerning the out sourcing of exhibit samples to private vendor forensic laboratories was discussed in both the House and Senate committee reports. The House committee recommended that *the Government of Canada maintain the National DNA Data Bank and all associated facilities as a public service and authorize the use of private facilities solely in exceptional overflow circumstances.* The Advisory Committee agrees that the maintenance and administration of databases that contain sensitive law enforcement information is and should continue to be an inherently governmental function. Under a very detailed and precise agreement, the RCMP utilized one private laboratory in the past to process some overflow samples, however, consistent with Canadian and U.S. SWGDAM policy and CODIS agreements, each case required a 100% technical review of the analytical file by a DNA specialist in an RCMP forensic laboratory followed by an upload of the profile to the CSI in the NDDB from a CODIS site within an RCMP forensic laboratory. CODIS sites are located exclusively in government forensic laboratories. The review process itself is a time consuming operation and ultimately removes a technical specialist from processing ongoing cases within the government laboratory. It is noted that the RCMP has not referred cases to a private vendor laboratory during the past year. The Ontario and Quebec forensic laboratories have indicated that they do not have the staff to handle such reviews and have advised private vendors within their jurisdictions that they will not review cases and upload DNA profiles to the CSI. Thus, at present, if a police agency sends a crime scene sample to a private forensic laboratory because if falls into a low priority processing category in one of the federal or provincial laboratories, there is no viable process presently in place to upload the

resulting crime scene profile to the NDDB. The Senate Standing Committee therefore made a recommendation that *the Government of Canada explore the possibility of entering into public/private partnerships with qualified and reliable private forensic labs, which would allow such labs to conduct DNA forensic analysis for police agencies and upload DNA samples and profiles to the crime scene index (CSI) at the National DNA Data Bank. However, appropriate terms and conditions, such as independent auditing mechanisms, recognized accreditation, confidentiality agreements, encryption technologies, arrangements ensuring government ownership of the DNA samples, and security clearances for employees should be components of such partnerships.*

The NDDB Advisory Committee is aware that the FBI, the U.S. Department of Justice and the U.S. SWGDAM committee are presently examining their policies in relation to the uploading of outsourced crime scene profiles from contracted vendor laboratories. While agreements with private laboratories concerning accreditation, oversight, confidentiality and privacy safeguards can be designed, it is the Advisory committee's opinion that the requirement for a 100% technical review of each case by a qualified individual in a government laboratory followed by uploading to the NDDB from a government laboratory CODIS site should not be diluted or compromised. The Committee is of the view that the solution to this issue is ultimately tied to resourcing, i.e., provide enough resources to the government laboratories so that outsourcing of cases by police departments to private laboratories is not required or provide appropriate resources to the government laboratories to administer oversight of private vender laboratories and fund the staff required to conduct technical reviews and crime scene profile uploads to the NDDB.

In a section of the Senate report dealing with witness concerns, the Senate Committee made two recommendations:

RECOMMENDATION 9

That the National DNA Data Bank Advisory Committee conduct a public consultation on the issue of whether or not the loci used by the National DNA Data Bank to create a DNA profile can or should be used to reveal personal characteristics or medical information about individuals, in order to assist police in identifying offenders.

RECOMMENDATION 10

That the National DNA Data Bank Advisory Committee publish the results of its public consultation, along with a recommendation as to whether or not, in its view, the framework for DNA collection and analysis provided by the DNA Identification Act should, as a consequence, be adjusted, in order to preserve an appropriate balance between the objectives of protecting society and the administration of justice and protecting the privacy of individuals, as outlined in section 4 of the Act.

These recommendations flowed from the Senate Standing Committee conclusion that there are conflicting expert opinions concerning whether or not personal characteristics or medical information can be derived from an analysis of the 13 loci currently used by Canadian forensic laboratories to compare DNA profiles. Generally described as "non-coding" or "junk" DNA, these segments of genetic material have not to this date, been identified within the forensic community as having any utility in the prediction of medical, physical or mental characteristics. In addition to the principle set out in section 4(b) of the DNA Identification Act, which states that DNA profiles and their source bodily substances may only be used for law enforcement purposes in accordance with this Act, and not for any unauthorized purpose, subsection 6(6) prohibits the transmission and use of the DNA profiles and bodily samples in the NDDB for any purpose except in accordance with the Act. Subsection 10(5) prohibits the transmission of stored bodily substances except for forensic DNA analysis and section 11 makes contravention of subsection 6(6) a criminal offence. Section 6, 7, and 8 of the *DNA Identification Act* prescribe in detail for what purposes DNA information may be used and transmitted. The Advisory Committee will consider these recommendations at its next meeting and decide upon an appropriate response.

Conclusions

The Advisory Committee has now been monitoring the operations of the NDDB for more than ten years. During that time, the Committee has met with representatives of the NDDB, members of the judicial community, international DNA scientists and users of the system in Canada. It continues to be the view of the Committee that while the NDDB is fulfilling its role effectively and operating appropriately within the provisions of the DNA Identification Act and associated Regulations, the lack of a permanent A Base funding strategy is a limiting factor in terms of the Data Bank's ability to maintain a full staff complement as well as plan for and evaluate new technologies. As the Data Bank is now growing rapidly following the passage of Bills C-13/ C-18 and may grow even more rapidly if DNA Orders become automatic upon conviction for all designated offences, the evaluation and

validation of new multiplex systems and Y-STR technologies is extremely important. The new technologies will not only increase the analytical efficiency of the Data Bank but also improve the discriminatory power of the DNA profile comparison process. While the Committee's mandate does not include the regional forensic laboratories, the output from those laboratories does have a direct bearing on the ultimate success of the NDDB, i.e., the number of matches between the CSI and the COI. Any action taken by the Federal and or Provincial Governments to improve the throughput of those laboratories will have a positive effect upon success of the NDDB.

Financial Highlights

Financial Report October 2009 – May 2010

DATES	EXPENSES
OCTOBER 28-30, 2010	$14,343.91
APRIL 29-30, 2010	$18,759.23
SECU ROUND TABLE MAY 10-11, 2010	$2,417.42